

2.0 COMMENT DOCUMENTS AND RESPONSES

This chapter presents the scanned images of original documents submitted to the Federal agencies on the Draft EIS, comments recorded as part of the transcripts of the public meetings (and any hand-ins), and the Federal agencies' responses to each comment. The scanned images are marked with sidebars denoting the identified comments and Federal agencies' responses corresponding to these comments. The responses to comments identical or similar in nature are repeated throughout the document.

2.1 Federal, State and Local Officials, Agencies, Companies, Organizations, and Special Interest Groups

Arizona Corporation Commission
Page 1 of 35

COMMISSIONERS
MARC SPITZER - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
MIKE GLEASON
KRISTIN K. MAYES



ARIZONA CORPORATION COMMISSION

BRIAN C. MCNEIL
Executive Secretary

October 14, 2003

Dr. Jerry Pell, Environmental Scientist
Manager, Electric Power Regulation
U. S. Department of Energy
Office of Fossil Energy, FE-27
Washington, D.C. 20585-0001

RE: **Tucson Electric Power Company, Sahuarita-Nogales Transmission Line
Draft Environmental Impact Statement
DOE/EIS-0336, BLM Reference No. AZA 31746**

Dear Dr. Pell:

Staff of the Arizona Corporation Commission provide the following Comments for the above-captioned matter, in accordance with the Department of Energy's Notice published August 27, 2003.

Very truly yours,

A handwritten signature in cursive script, appearing to read "C. Butler".

Caroline A. Butler
Legal Division

Encl. As stated.

cc: Anthony J. Como, Engineer, Team Leader

1200 WEST WASHINGTON STREET, PHOENIX, ARIZONA 85007-2927 / 400 WEST CONGRESS STREET, TUCSON, ARIZONA 85701-1347
www.cc.state.az.us

This document is available in alternative formats by contacting Yvonne McFarlin, ADA Coordinator, voice phone number 602-542-3931, E-mail YMcFarlin@cc.state.az.us

Arizona Corporation Commission
Page 2 of 35

Comment No. 1

**Tucson Electric Power Company
Sahuarita-Nogales Transmission Line
Draft Environmental Impact Statement
DOE/EIS-0336, BLM Reference No. AZA 31746**

Comments of the Arizona Corporation Commission Staff

I. Purpose of Comments

The following formal comments are submitted by Utilities Division Staff ("Staff") of the Arizona Corporation Commission ("ACC" or "Commission"). The foundation for these comments is derived from the evidentiary records of several Commission cases dealing with the need for a second transmission line to serve Santa Cruz County in southern Arizona.¹ Tucson Electric Power Company ("TEP") proposes to build such a new, double circuit, 345 kV transmission line from its existing South Substation near Sahuarita, Arizona to a new Gateway Substation located several miles west of the existing Valencia Substation in Nogales, Arizona. A 115 kV line is also proposed from the new Gateway Substation to the Valencia Substation. The double circuit 345 kV line will continue south from Gateway Substation, cross the U.S. - Mexico border and extend approximately 60 miles into Mexico to connect with the Comisión Federal de Electricidad ("CFE") Santa Ana Substation.

1

Staff's comments are offered for the sole purpose of providing a factual record regarding the consequences of the "No Action Alternative" contained in the Draft Environmental Impact Statement ("DEIS"). The DEIS defines the "No Action Alternative" as meaning that TEP's proposed transmission line is not built. The Commission has established a need for such a transmission line to resolve major electric service concerns for the approximately 13,000 residents of Santa Cruz County.² Similarly, the Commission has established that there are no other technical solutions to assure continuity of service during the outage of the sole transmission line serving these consumers.³ Therefore, it is reasonable to conclude that the "No Action Alternative" is not in the public's best interest.

For the Department of Energy ("DOE") and the cooperating Federal agencies, "no action" would be achieved by any one of the Federal agencies declining to grant TEP permission to build in the agency's respective jurisdiction. Thus, in the case of DOE, "no action" means denying the Presidential Permit; for the United States Forest Service ("USFS"), "no action" means denying the special use permit; for the Bureau of Land Management ("BLM"), "no action" means denying access to BLM-managed Federal lands; and for the US Section of the International Boundary Water Commission ("USIBWC"), "no action" means not approving construction plans. Each agency makes its own decision independently, so that it is possible that one or more agencies could grant permission for the proposal while another could deny permission. All three routes considered in the DEIS cross Federal lands. If any Federal agency denied permission for the proposed transmission line, it could not be built. Such independent "no action" by a

¹ Docket No. E-01032A-99-0401 and Docket No. L-00000C-01-0111.

² Docket No. E-01032A-99-0401, Decision No. 62011, November 2, 1999.

³ Docket No. L-00000C-01-0111, Decision No. 64356, January 15, 2002.

The information provided by the Arizona Corporation Commission (ACC) Staff provides an explanation underlying the ACC's decision to order the construction of a second transmission line to Nogales, Arizona. Section 1.1.2, The Origin of TEP's Proposal: TEP's Business Plan and the Proceedings of the Arizona Corporation Committee, has been added to the Final EIS to include an explanation of the relevant ACC decisions and the relationship to TEP's proposed project. Additionally, the relevant proceedings of the ACC have been placed in Appendix J in order for interested parties to review the ACC's record regarding this matter.

Arizona Corporation Commission

Page 3 of 35

cooperating Federal agency should be viewed as not in the affected public's best interest given the consequences outlined herein.

II. Need for Proposed New Transmission Line

In Decision No. 62011, the Commission ordered Citizens Communication Company ("Citizens") to construct a second transmission line to Nogales, Arizona by December 31, 2003 to improve the reliability of electric service to its customers in Santa Cruz County.⁴ This Decision approved a Settlement Agreement between Commission Staff and Citizens that included construction of a second transmission line to Nogales to address long-standing quality of service complaints related to frequent and extended electric power outages in Santa Cruz County. Staff concluded that Citizens' quality of service was unacceptable and that construction of a second transmission line was essential to provide adequate service.⁵ This conclusion was formed as a result of reviewing Citizens' 1998 outage history for Santa Cruz County customers. The average hours of outage experienced annually by customers rose from 3.5 hours in 1997 to 12.3 hours in 1998. The associated number of customer service interruptions rose over the same period of time from 545 in 1997 to 584 in 1997. The primary cause of service degradation during that one year was attributable to four transmission line outage events.

1
cont.

Transmission line outages are prevalent in Santa Cruz County during summer storm season due to lightning activity and strong winds accompanying annual monsoon weather activity. With only one transmission line serving Santa Cruz County, a transmission line outage results in extended interruption of service to customers. It is reasonable for customers' to complain about the frequency and duration of such transmission outages that leave them without air conditioning during the deadly heat of summer. Such transmission outages continue to plague these customers today. For example, a transmission outage of several hours duration occurred within the past several months. Such outages can be expected to occur until such time as a second transmission line is constructed to Nogales. Only then, will customers be able to expect continuity of service for a transmission line outage.

Citizens was to file an application for a CEC by November 11, 2000 according to Decision 60211. On October 31, 2000 Citizens filed a request for extension of filing an application for a Certificate of Environmental Compatibility ("CEC") for the second transmission line to Nogales. The extension was granted for two reasons. Additional time was required to resolve a special use permit for the proposed line to cross Coronado National Forest land. Secondly, Citizens and TEP agreed to jointly file an application for a 345 kV and 115 kV line project (Gateway Transmission Project) that would allow Citizens to fulfill its requirements of Decision No. 62011. Citizens and TEP jointly filed a CEC application for the Gateway 345 kV and 115 kV Transmission Project with the Commission on March 1, 2001. The 345 kV line portion of that project is the subject of this DEIS.

In its Decision No. 64356, dated January 15, 2002, the Commission granted TEP and Citizens a CEC to construct the subject Gateway Transmission Project utilizing the preferred

⁴ Finding of Fact 16 at 3, Decision 62011 (November 2, 1999)

⁵ Staff Witness, Jerry D. Smith, Direct Testimony, Docket No. E-01032A-98-0611, April 6, 1999 pp. 4-6 (Exhibit A).

Arizona Corporation Commission

Page 4 of 35

Comment No. 2

Comment noted.

1
cont.

Western Route as defined in this DEIS. During the course of the state's transmission line siting proceedings the rationale for the proposed new transmission line was revisited. Staff once again testified that continuity of service could not be assured for the residents of Santa Cruz County as long as a radial transmission line is the sole means of connecting Citizens' Santa Cruz Electric Division facilities to the state grid. Restoration of service following a transmission line outage can take up to two hours under ideal conditions even with operating procedures utilizing local generation operating in a standby mode during storm season.⁶ A second transmission line to Citizens' electric service area is required to resolve this service reliability problem.

Staff also testified in the siting of the Gateway 345 kV and 115 kV Transmission Project that additional benefits are derived from the project as currently defined in the DEIS.⁷ Service reliability to Citizens' customers via the proposed project will be better than what could have been achieved solely with a new 115 kV line from South Substation to Nogales. The proposed transmission interconnection from Gateway Substation to Mexico offers two other new benefits. It offers the opportunity for bilateral international power transactions between parties on either side of the U.S. – Mexico border. The international interconnection also affords TEP the opportunity to import power to the Tucson service area from the south thereby helping to mitigate its local transmission import constraint.

More importantly, the Gateway transmission line siting hearings established a new important concern regarding service to Citizens' Santa Cruz County customers.⁸ Citizens offered a load forecast presented at the hearing during Mr. Cravens testimony (See Exhibit D, RAC-2)⁹ and testified that Santa Cruz County load could exceed the 60 MW rating of the existing 115 kV line as early as the summer of 2003. In ordering Citizens to construct a second transmission line to Nogales by December 31, 2003, the Commission had only considered what Citizens felt was a reasonable time period to go through a transmission line siting process that also required an EIS. No consideration was given to the level of system loading that would occur on the existing 115 kV line in the interim. It is expected that the Santa Cruz County load will consistently exceed the 60 MW rating for the existing 115 kV line in the summer of 2004 and beyond. (See Exhibit D).

2

If Staff were making a determination today, we would make quite a different requirement of Citizens. Staff is very concerned about how Santa Cruz County customers will be served beyond the summer peak of 2003, even with the second transmission line. Staff would have recommended system improvements in addition to the second transmission line to Nogales and at an earlier date had the RAC-2 load forecast been known back in 1999. Additional local generation capacity, upgrades to the existing transmission line to increase its capacity, a new third transmission line, or a combination thereof would have been required.¹⁰

⁶ Jerry D. Smith, Direct Testimony, (Hearing Exhibit S-1) Docket No. L-00000C-01-0111, May 3, 2001, pp. 3-4. (Exhibit B)

⁷ Ibid, pp. 6-7. (Exhibit B)

⁸ Docket No. L-00000C-01-0111, Tr. Volume III, pp. 683-685. (Exhibit C)

⁹ Hearing Exhibit Citizens-1, Santa Cruz Electric Peak Loads 1995-2010 (Exhibit D herein)

¹⁰ Ibid, Tr. Volume IV, pp. 856-870. (Exhibit C)

Arizona Corporation Commission
Page 5 of 35

Comment No. 3

III. Other Technical Alternatives Considered

Staff has considered the effects of distribution system improvements made by Citizens, operation of existing local generation and construction of new local generation. None of these system improvements have proven effective in resolving the fundamental system reliability concerns for Santa Cruz County. Contrary to comments provided at the DEIS public meetings, a second transmission line to Nogales is the only technical means of assuring continuity of service for Santa Cruz County customers for an outage of the existing 115 kV transmission line.

There are those that claim distribution system improvements made by Citizens have basically resolved their quality of service concerns. Staff does not agree. Review of distribution system improvements made by Citizens led Staff to conclude that greater system flexibility for restorative distribution switching and reduced customer exposure to distribution outages were being achieved.¹¹ There is more to quality of service than just outages. When the lights dim, when your television screen shrinks in size, or when you turn on the air conditioner or your washing machine and the voltage dips and the lights dim are all examples of distribution system issues. Staff believes such quality of service issues have been substantially improved by the distribution improvements made by Citizens over the past few years. Nevertheless, the primary cause of the local electric service degradation, loss of a transmission line, has not been adequately addressed.

It became evident to Staff that operation of Citizens' Valencia generating units was not an effective solution to the loss of the 115 kV transmission line.¹² Local generating units trip off line for the loss of any portion of the transmission line. Therefore Staff and Citizens agreed that the three Valencia units should be operated in standby mode anytime a storm is eminent. This facilitates and expedites the restoration of service following a transmission outage and avoids the need for a black start of the units when no local AC power exists. However, operating the Valencia units in this manner does not solve the reliability problem.

Similarly, new local generation does not pre-empt the need for a second transmission line. This is because the system deficiency is not a supply problem but rather a delivery problem that new generation can not solve. New local generation would be susceptible to tripping off line for a transmission line outage just like the existing Valencia units until a second transmission line connects Nogales to the Arizona grid.¹³ Once a second transmission line is in service, new local generation can serve very effectively as a competitive supply source for Santa Cruz County.¹⁴ In fact, Staff has consistently required that two transmission lines emanate from power plants as a requirement when seeking a CEC from the Commission.

¹¹ Jerry D. Smith, Direct Testimony, Docket No. L-00000C-01-0111, May 3, 2001, p. 3. (Exhibit B)

¹² Ibid.

¹³ Docket No. L-00000C-01-0111, Tr. Volume IV, pp. 720-725, 864-870. (Exhibit C)

¹⁴ Ibid. Tr. Volume IV, pp. 541, 681. (Exhibit C)

In revising the EIS, the Federal agencies have included additional information provided by the commentor on the nature of the reliability concerns in Nogales and on the reasons why the ACC staff concluded that an additional transmission line is needed. (See Section 1.1.2, The Origin of TEP's Proposal: TEP's Business Plan and the Proceedings of the Arizona Corporation Committee; ACC Decision No. 62011, dated November 2, 1999, in Appendix J; and Section 2.1.5, which discusses why a local power plant was eliminated as a reasonable alternative in the EIS.)

Arizona Corporation Commission
Page 6 of 35

Comment No. 4

Impacts associated with the delay in building the transmission line are encompassed within the No Action alternative.

IV. Expedited Approval Warranted

4

Staff was asked to comment on the effects of potential delays in approving the proposed Gateway Transmission Project.¹⁵ This is in effect equivalent to asking what are the consequences of a “No Action Alternative” finding in the DEIS. Staff’s response was that deferring the granting of a CEC for the project, waiting for the NEPA process to run its course, and then completing the state siting process would ultimately result in delay of the service date for the second transmission line. The evidence in the record suggests that would not be a prudent choice when considering the public’s interest. (See Exhibit D). Slow action or “no action” regarding the needed facility basically ensures there are going to be serious problems serving the customers in Santa Cruz County beyond the summer of 2002. Similarly, Staff was asked what it would recommend to the Commission regarding whether or not to waive the December 31, 2003 in-service date requirement for the project. Staff responded that facts currently on the record suggest it would be appropriate to encourage acceleration rather than delay of the project.

¹⁵ Ibid. Tr. Volume III, pp. 687-688. (Exhibit C)

Arizona Corporation Commission
Page 7 of 35

EXHIBIT
A

Arizona Corporation Commission
Page 8 of 35

BEFORE THE ARIZONA CORPORATION COMMISSION

JIM IRVIN
Commissioner-Chairman
TONY WEST
Commissioner
CARL J. KUNASEK
Commissioner

IN THE MATTER OF THE JOINT NOTICE OF	)	DOCKET NOS. E-01032A-98-0611
INTENT OF CITIZENS UTILITIES COMPANY,	)	T-03214A-98-0611
CITIZENS TELECOMMUNICATIONS OF	)	T-02115B-98-0611
THE WHITE MOUNTAINS, NAVAJO	)	T-01954B-98-0611
COMMUNICATIONS COMPANY, INC.,	)	T-02755A-98-0611
CITIZENS UTILITIES RURAL COMPANY,	)	SW-02276A-98-0611
INC., CITIZENS TELECOMMUNICATIONS	)	W-01656A-98-0611
COMPANY, SUN CITY SEWER COMPANY,	)	SW-02334A-98-0611
SUN CITY WATER COMPANY, SUN CITY	)	W-03454A-98-0611
WEST UTILITIES COMPANY, CITIZENS	)	W-03455A-98-0611
WATER SERVICE COMPANY OF ARIZONA,)	
CITIZENS WATER RESOURCES COMPANY)	
OF ARIZONA, TUBAC VALLEY WATER)	
COMPANY, INC., AND ELECTRIC)	
LIGHTWAVE, INC. TO ORGANIZE A PUBLIC)	
UTILITY HOLDING COMPANY AND FOR)	
RELATED APPROVALS OR WAIVERS)	
PURSUANT TO R14-2-801, ET SEQ.)	

DIRECT

TESTIMONY

OF

JERRY D. SMITH

UTILITIES CONSULTANT

UTILITIES DIVISION

April 6, 1999

JDS611T.DOC

Arizona Corporation Commission
Page 9 of 35

Direct Testimony of Jerry D. Smith
Docket No. E-01032A-98-0611
Page 4

1 basic character of the system is changing. A network of distribution substations
2 containing redundant transformer capacity serving customers via shorter distribution
3 feeders with greater switching flexibility is emerging. The emerging distribution system
4 is taking on operational characteristics representative of urban settings.

5
6 Q. What is a radial 115 kV transmission line?

7 A. A radial line is defined as being connected to a single source of power on one end of the
8 line and serves load at various connections along its length.

9
10 Q. Please describe the quality of electric service being provided by Citizens in Santa Cruz
11 County.

12 A. Citizens' quality of service to Santa Cruz County customers has been unacceptable over
13 the past year. Citizens' 1998 outage history for Santa Cruz is attached as Exhibit JS-2. It
14 reflects the average hours of outage experienced annually by customers has risen from
15 3.5 hours to 12.3 hours since 1997. The associated customer service interruptions rose
16 from 545 in 1997 to 584 in 1998. The primary cause of service degradation is attributable
17 to four transmission line outage events. However, service in 1998 deteriorated even if one
18 disregards the effects of the transmission outages.

19
20 Q. Did you observe any field conditions during your visit that may contribute to such
21 degradation of service?

22 A. I observed a broken insulator on Sonoita Substation transformer #2 and an oil leak on the
23 same transformer. These two items were first observed during an April 3, 1997 site visit.
24 Staff has requested Citizens to make the needed repairs on two occasions. Citizens
25 committed in a January 26, 1999 letter to making the needed repair by March 30, 1999,
26 but has failed to do so. Equipment in such a state of disrepair is more susceptible to
27 failure during adverse weather or system operating conditions.
28

JDS611T.DOC

Arizona Corporation Commission
Page 10 of 35

Direct Testimony of Jerry D. Smith
Docket No. E-01032A-98-0611
Page 5

1 Q. Do the system improvements made by Citizens over the past few years seem prudent and
2 offer the opportunity for improved electrical service to its customers?

3 A. Citizens' addition of two new substations to serve the Rio Rico and Tubac regions
4 accompanied by associated new sectionalizing equipment, distribution feeders, and
5 capacitors was appropriate. Customer exposure to distribution outages is reduced and
6 greater system flexibility for restorative distribution switching now exists. The quality of
7 normal distribution service should also be enhanced as a result of shorter distribution
8 lines. However, the primary cause of service degradation, loss of a transmission line, has
9 not been adequately addressed.

10
11 Q. What are the operational implications of recent system improvements made by Citizens?

12 A. The redundancy of distribution facilities offers more operational flexibility to respond to
13 disturbances. This ability is further enhanced by remote monitoring and control of certain
14 system elements via Supervisory Control And Data Acquisition ("SCADA") equipment.
15 Unfortunately, outages can also be exacerbated by remote operation of SCADA
16 controlled devices in the absence of information concerning the status of elements not
17 monitored by SCADA. This implies a greater need for operational dispatch training,
18 procedural guidelines and documentation of the status of unmonitored equipment.
19

20 Q. What level of operational preparedness has Citizens demonstrated in accommodating
21 recent Santa Cruz Electric District system improvements?

22 A. Operating procedural guidelines do not appear to exist for the electric system as it is
23 currently configured. I perceive it was quite an exercise for Citizens to prepare and
24 provide procedures for restoring service following a transmission line outage. The same
25 is true of documenting the "Black Start Procedure" used for starting its gas turbine
26 generators at Valencia Substation when there is no AC power. This is astounding as they
27 actually were required to take such action for transmission outages that occurred in 1998.
28

JDS611T.DOC

Arizona Corporation Commission
Page 11 of 35

Direct Testimony of Jerry D. Smith
Docket No. E-01032A-98-0611
Page 6

1 Although Citizens claims to rehearse black start of its turbines on a weekly basis, the
2 procedures it has for doing this were just recently provided to Staff. Staff first requested
3 this type of information in January 1999. These procedures are attached as Exhibit JS-3
4 and should have been part of Citizens' protocols since the turbines were first put in
5 service.

6
7 Q. Do you have other concerns regarding the operational preparedness of Citizens?

8 A. Citizens has not given an indication of how they expect the transmission outage
9 procedures to change as additional SCADA capability is added and a dispatch center is
10 placed in operation. Nor does a map room currently capture the current status of all
11 system equipment and switches. Given all of the system changes occurring, it would be
12 difficult for dispatch personnel to know the status of a large segment of the system. This
13 poses considerable risk from a safety of operation perspective. Particularly, the remote
14 operation of reclosures not located in substations which could result in energizing a line
15 that has personnel working on it. Provision of the above items should be a prerequisite to
16 allowing SCADA dispatch control from locations remote to the service area.

17
18 **RESPONSE TO MR. DANIEL MC CARTHY'S TESTIMONY**

19 Q. Do you agree with Mr. McCarthy's testimony concerning expected results of its planned
20 transmission line service reliability improvements?

21 A. I agree that installing a 115 kV ring bus and accompanying circuit breakers at Nogales
22 Tap will greatly improve the reliability of WAPA's delivery of power to Citizens at that
23 location. It automatically sectionalizes WAPA's transmission line for disturbances and
24 leaves Citizens' line connected to the unaffected line section. Nevertheless, Citizens
25 transmission line reliability is unchanged by this \$2 million expenditure. It continues to
26 operate as a radial line offering 55 miles of outage exposure. A second transmission line
27 to Citizens' electric service area is required to resolve this service reliability problem.
28

Arizona Corporation Commission
Page 12 of 35

Direct Testimony of Jerry D. Smith
Docket No. E-01032A-98-0611
Page 7

1 Q. Does Citizens plan to install a second transmission line into its Santa Cruz service area?

2 A. According to Mr. McCarthy's testimony, Citizens has temporarily suspended preliminary
3 studies of transmission alternatives until a Citizens Advisory Group is formed in Santa
4 Cruz County. Mr. McCarthy has reported to me that Citizens is using Power Engineering
5 and Dames & Moore as consultants for the proposed new transmission line and is
6 awaiting their report. Mr. Resal Craven of Citizens responded to a Staff data request
7 concerning the proposed new transmission line with a map showing potential routes and
8 an explanation of how a 2003 in service date was derived. This information is included as
9 Exhibit JS-4. Citizens' responses lead me to conclude their plans for a second
10 transmission line are still in the infancy of development. No sense of urgency is evident
11 in Citizens reported action.

12
13 **COMMISSION DECISION No. 61383**

14 Q. This Commission has ordered Citizens to file in this docket an "Analysis of Alternatives
15 and Plan of Action" to rectify service problems in Santa Cruz Electric Division. Have
16 you seen such a Plan?

17 A. No. I have not. Mr. McCarthy reported to me that Citizens intends to file the required
18 Plan of Action by April 15, 1999. He did commit to providing me a preliminary plan and
19 did so on April 1, 1999.

20
21 Q. Have you formed an opinion as to the adequacy of the preliminary plan?

22 A. I am in the process of reviewing the preliminary plan. Several days will be required to
23 digest the contents of the preliminary plan and assess the degree to which it has complied
24 with the intent of the Commissions' order. I will file supplemental Staff testimony once
25 Citizens has filed its final Plan of Action and I have the opportunity to review Citizens
26 final plan.
27
28

**EXHIBIT
B**

BEFORE THE ARIZONA CORPORATION COMMISSION

WILLIAM A. MUNDELL
Chairman
JIM IRVIN
Commissioner
MARC SPITZER
Commissioner

IN THE MATTER OF THE JOINT)
APPLICATION OF TUCSON ELECTRIC) DOCKET NOS. L-00000C-01-0111
POWER COMPANY AND CITIZENS) L-00000F-01-0111
COMMUNICATIONS COMPANY FOR A)
CERTIFICATE OF ENVIRONMENTAL)
COMPATIBILITY FOR A PROPOSED 345 KV)
TRANSMISSION LINE SYSTEM FROM)
TUCSON ELECTRIC POWER COMPANY'S)
EXISTING SOUTH 345 KV SUBSTATION)
IN SEC. 36, T.16S., R.13E, SAHUARITA,)
ARIZONA, TO THE PROPOSED GATEWAY)
345/115 KV SUBSTATION IN SEC. 12, T.24S.,)
R.13E., NOGALES, ARIZONA WITH A 115 KV)
INTERCONNECTION TO THE CITIZENS) **STAFF'S NOTICE OF FILING**
COMMUNICATIONS COMPANY'S 115 KV) **OF TESTIMONY**
VALENCIA SUBSTATION IN NOGALES,)
ARIZONA, WITH A 345 KV TRANSMISSION)
LINE FROM THE PROPOSED GATEWAY)
SUBSTATION SOUTH TO THE INTER-)
NATIONAL BORDER IN SEC. 13, T.24S.,)
R.13E.

The Utilities Division staff of the Arizona Corporation Commission hereby files in these
dockets the comments of Jerry D. Smith, Electric Utilities Engineer, Utilities Division Engineering
Section.

RESPECTFULLY SUBMITTED this 3rd day of May, 2001.


Teena Wolfe
Attorney, Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
(602) 542-3402
e-mail: TWOLFE@CC.STATE.AZ.US

H:\DOCS\TEENA\PLEADING\01-0113\SUMMARYTEST.DOC

Arizona Corporation Commission
Page 15 of 35

Comments of Jerry D. Smith, ACC Staff
Docket No. L-00000C-01-0111

Page 3

1 was attributable to four transmission line outage events. Mr. Smith concluded that Citizens'
2 quality of service to its Santa Cruz County customers was unacceptable.³

3 Review of system improvements made by Citizens over the past few years led Mr. Smith
4 to conclude that greater system flexibility for restorative distribution switching and reduced
5 customer exposure to distribution outages were being achieved.⁴ Nevertheless, the primary
6 cause of service degradation, loss of a transmission line, was not adequately addressed.
7 Furthermore, written operating procedural guidelines did not exist for restoring service following
8 a transmission line outage. The same was true regarding the lack of "Black Start Procedures" for
9 starting Citizens' gas turbine generators at Valencia Substation when no AC power exists.
10 Citizens actually had to take such action four times following transmission outages in 1998.
11 Written procedures were developed and submitted to Staff on January 28, 1999.⁵

12 It became evident, during review and refinement of the newly developed operating
13 procedures, that operation of Citizens' generators was not an effective solution. As long as a
14 radial transmission line is the sole means of connecting Citizens' Santa Cruz Electric
15 Division facilities to the state grid, continuity of service cannot be assured by means of local
16 generators. Local generating units will trip off line for the loss of any portion of the radial
17 transmission line. The generating units would then be restarted as part of service restoration
18 procedures.

19 Citizens and ACC Staff agreed the three Valencia generating units should be operated at
20 100% speed with no load anytime a storm rolls in.⁶ This avoids use of black start procedures for
21 the units and shortens the service restoration time following a system disturbance. Even so,
22 restoration of service following a transmission line outage can take up to two hours under
23 ideal conditions. A second transmission line to Citizens electric service area is required to
24

25
26 ³ ACC Docket No. E-01032A-98-0611, April 6, 1999, Testimony of Jerry D. Smith, page 4, lines 12-18.

27 ⁴ ACC Docket No. E-01032A-98-0611, April 6, 1999, Testimony of Jerry D. Smith, page 5.

28 ⁵ ACC Docket No. E-01032A-98-0611, April 6, 1999, Testimony of Jerry D. Smith, Exhibit JS-4, page 1-2.

⁶ ACC Docket No. E-01032A-99-0401, July 16, 1999, Supplemental Testimony of Jerry D. Smith, Exhibit JS-6,
page 1.

JDS: Case0111.doc

Arizona Corporation Commission
Page 16 of 35

Comments of Jerry D. Smith, ACC Staff
Docket No. L-00000C-01-0111

Page 4

1 resolve the service reliability problem and enable continuity of service for a transmission
2 line outage.⁷

3 The Commission ordered in its Decision No. 61383 that Citizens file an "Analysis of
4 Alternatives and Plan of Action" to rectify service problems in Santa Cruz County. The Plan
5 was to include a cost benefit analysis of alternatives, the alternative chosen and proposed
6 deadlines for implementation of the chosen alternative. The Commission dismissed the City of
7 Nogales' complaint about Citizens service in Decision No. 61792 which approved a settlement
8 agreement among parties. In addition to the terms of the settlement agreement, that decision
9 further ordered Citizens to provide a planned service date and cost benefit analysis for the cost of
10 system components of the second transmission line included in its Plan of Action as directed by
11 Decision No. 61383.

12 Citizens filed a "Santa Cruz Transmission Alternatives and Plan of Action" on April 15,
13 1999. The report was essentially a preliminary transmission line environmental siting document.
14 Citizens filed an associated "Supplement" on May 7, 1999 and a second "Supplement" on July
15 13, 1999. The composite of all three documents does comply with the reporting requirements of
16 both Decision No. 61383 and Decision No. 61792.

17
18 **COMPLIANCE WITH ACC DECISION NO. 62011**

19 The Commission adopted an August 9, 1999 settlement agreement between Citizens and
20 Staff via Decision No. 62011. That decision ordered that Citizens comply with the
21 settlement agreement by filing for a Certificate of Environmental Compatibility for a new
22 transmission line to Nogales by November 11, 2000. It further ordered that Citizens build
23 the second transmission line to serve its customers in Santa Cruz County by December 31,
24 2003. The scheduled in-service date for the line is to be accelerated if an Environmental Impact
25 Statement is not required. The settlement agreement also establishes a framework for delay
26 penalties for Citizens' failure to perform in accordance with its proposed schedule.

27
28 ⁷ ACC Docket No. E-01032A-99-0401, July 16, 1999, Supplemental Testimony of Jerry D. Smith, Exhibit JS-6,
page 3, lines 21-25.

JDS: Case0111.doc

Arizona Corporation Commission
Page 17 of 35

Comments of Jerry D. Smith, ACC Staff
Docket No. L-00000C-01-0111

Page 6

There is one segment of the proposed project that does not comply with the intent of Decision No. 62011. Staff does not support Citizens placement of the new 115 kV line from Gateway to Valencia on a double circuit pole with the existing 115 kV line terminating at Valencia. This is in direct conflict with the reliability objective of the ACC ordered construction of a new transmission line. If the two 115 kV lines must occupy the same right of way, they should at least be on separate poles. Staff's preference would be for the two 115 kV lines to traverse different routes until reaching the new Valencia Switchyard site. Such an alternate route is depicted as link 60 on Exhibit A-3.1 of the application.

ADDITIONAL BENEFITS OF THE GATEWAY 345 AND 115 KV PROPOSAL

It is Mr. Smith's professional opinion that the proposed project will improve the reliability of service to Citizens customers beyond what could have been achieved via a second 115 kV transmission line. Gateway Substation will be served by multiple 345 kV transmission lines and will likely become a more robust delivery point for Citizens 115 kV system than the existing Nogales Tap Substation. This will afford Citizens the opportunity to plan and expand its electric system in the vicinity of Nogales in a much more efficient and reliable manner. This project will also allow Citizens to sectionalize its 115 kV system with circuit breakers in a different manner in the future. This is particularly true if a second 115 kV transmission line from Gateway Substation is ultimately constructed to Citizens system.

There are other benefits of the Gateway 345 kV and 115 kV Transmission Project if TEP is successful in obtaining a Presidential Permit to interconnect its Gateway Substation to Mexico. By constructing the two proposed 345 kV ties from Gateway to the Comision Federal de Electricidad ("CFE") system, bilateral international power transactions can occur between parties on either side of the US-Mexico border. Such an international interconnection might also serve as a precursor for other international transmission interconnections that could result in service reliability improvements of other Arizona and CFE electric systems aligned along the US-Mexico border.

JDS: Case0111.doc

Arizona Corporation Commission
Page 18 of 35

Comments of Jerry D. Smith, ACC Staff
Docket No. L-00000C-01-0111

Page 7

The Gateway 345 kV and 115 kV Transmission Project also affords TEP the opportunity to import power to the Tucson service area from the south. This is an important technical issue given TEP's two county financing requirement that power must simultaneously flow into TEP's Tucson service area via its three extra high voltage ("EHV") delivery points. Similarly, the 345 kV lines constructed via the proposed project offers an opportunity to deliver power to consumers (Arizona or Mexico) from any new power plant that chooses to construct on either side of the border and interconnect with the proposed project.

ACC STAFF RECOMMENDATION

Given that DOE has not concluded its environmental assessment of all proposed transmission routes, the applicants have requested approval of a primary and alternate route for the 345 kV line. This affords the applicants the opportunity to proceed with the alternate route if the preferred route is found to be unacceptable during DOE's environmental assessment. Staff supports this approach for this project given the short time line for constructing the project.

ACC Staff recommends that link 60 of the alternate 115 kV route be approved in lieu of Applicant's preferred ingress to the new Valencia 115 kV Switchyard. This avoids the undesirable use of common structures to double circuit the new 115 kV line and the existing 115 kV line. Staff would also request that distribution circuits not be allowed to attach to the new 115 kV line when it is constructed or in the future. Distribution circuits can always be placed underground as an alternative. Staff recommends these provisions in order to assure that the desired system reliability is achieved and that the outage of 115 kV and distribution lines will be independent events.

Staff recommends approval of the proposed project in accordance with the above-stated provisions. Such approval will comply with the implied reliability objectives of Decision No. 62011. Staff echoes the previously cited sentiments expressed by DOE in Exhibit A. Staff believes approval of this project does not prohibit, impede or inhibit the opportunity for other local transmission or power plant projects to proceed on their own merits. In fact, such projects may benefit from the prior siting and construction of these applicants' project.

JDS: Case0111.doc

Arizona Corporation Commission

Page 21 of 35

TEP and CCC
Case No. 111VOLUME III
05-17-2001

Page 495			Page 497		
1	INDEX TO EXAMINATIONS		1	BE IT REMEMBERED that the above-entitled	
2	WITNESSES		2	and numbered matter came on regularly to be heard	
3	DANIEL ELDER		3	before the Power Plant and Transmission Line Siting	
4	Cross-Examination by Mr. Duffy	542	4	Committee, at the Ranada Inn Motel, 401 North First	
5	Visit Dire Examination by Mr. Heyman	568	5	Street, Phoenix, Arizona, commencing at 9:10 a.m. on	
6	Redirect Examination by Mr. Heyman	587	6	the 17th day of May, 2001.	
7	EDMOND A. BECK		7		
8	Cross-Examination by Mr. Duffy	509	8		
9	Cross-Examination by Mr. Campbell	571	9	BEFORE: LAURIE A. WOODALL, Chairman	
10	Redirect Examination by Mr. Heyman	590	10	RAY WILLIAMSON, Arizona Corporation	
11	Recross Examination by Mr. Campbell	614	11	Commission	
12	RESAL CRAVEN		12	RICHARD TOBIN, Department of Environmental	
13	Cross-Examination by Mr. Duffy	532	13	Quality	
14	Redirect Examination by Mr. Grant	605	14	MARK McWHIRTER, Department of Commerce	
15	Cross-Examination by Mr. Magruder	616	15	WAYNE SMITH, appointed member	
16	WALTER MEER		16	SANDIE SMITH, appointed member	
17	Statement	654	17	MIKE PALMER, appointed member	
18	Cross-Examination by Mr. Heyman	657	18	JEFF McGUIRE, appointed member	
19	Cross-Examination by Mr. Grant	659	19		
20	Cross-Examination by Mr. Duffy	661	20	APPEARANCES:	
21	Cross-Examination by Mr. Magruder	662	21	For the Arizona Corporation Commission:	
22	TERRY FRONTERHOUSE		22	Ms. Teresa I. Wolfe	
23	Direct Examination by Ms. Wolfe	669	23	Staff Attorney, Legal Division	
24	Cross-Examination by Mr. Grant	711	24	1200 West Washington Street	
25	JERRY SMITH		25	Phoenix, Arizona 85007	
	Direct Examination by Ms. Wolfe	675		For Citizens Communications Company:	
	Cross-Examination by Mr. Heyman	699		GALLAGHER & KENNEDY	
	Cross-Examination by Mr. Grant	713		By Mr. Michael Grant	
	Cross-Examination by Mr. Meek	720		2575 East Camelback Road	
	Cross-Examination by Mr. Duffy	726		Phoenix, Arizona 85016-9225	

Page 496			Page 498		
1	INDEX TO EXHIBITS		1	APPEARANCES:	
2	NO. DESCRIPTION IDENTIFIED ADMITTED		2		
3	Falco-1		3	For Tucson Electric Power Company:	
4	Statement of Emilio Falco	504 505	4	ROSHKA HEYMAN & DEWULF, PLC	
5	Citizen's 3		5	By Mr. Raymond S. Heyman	
6	Map	428 566	6	Two Arizona Center, Suite 1000	
7	TEP-10 Notice of publication	566 566	7	400 North Fifth Street	
8	TEP-12 Map	345 567	8	Phoenix, Arizona 85004-1902	
9	TEP-13 Copy of Exhibit A-3	567 567	9	and	
10	TEP-14 Photo simulations	568 570	10	Mr. Marcus Jorden	
11	Meek-1 Prefiled statement of	654 655	11	Senior Attorney, Tucson Electric Power	
12	Walter Meek		12	220 West Sixth Street	
13	S-1 Prefiled direct testimony	676 678	13	Tucson, Arizona 85702-0711	
14	Jerry Smith		14	For Public Service Company of New Mexico:	
15	S-2 Diagram	672 678	15	LEWIS AND ROCA, LLP	
16	S-3 Staff Conditions	677 678	16	By Mr. Thomas H. Campbell	
17	Portions marked for Member Tobin:		17	40 North Central Avenue	
18	Pages 720 and 729		18	Phoenix, Arizona 85004-4429	
19			19	For Santa Cruz Valley Citizens Council:	
20			20	RIDGE & ISAACSON, P.C.	
21			21	By Mr. Steven J. Duffy	
22			22	1101 North Central Avenue, Suite 1090	
23			23	Phoenix, Arizona 85012-2641	
24			24	For Santa Cruz County:	
25			25	Ms. Nicole Weber	

2 (Pages 495 to 498)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission

Page 22 of 35

TEP and CCC
Case No. 111VOLUME III
05-17-2001

Page 539			Page 541		
1	transmission there is Western Area Power		1	problems for all the time. RAC-2 principally	
2	Administration; however, at this point they have no		2	illustrates the fact that by about December, 2003, we	
3	additional lines to which we can interconnect.		3	will need additional capacity in the area. This	
4	Q. Well, I guess maybe I missed it and you		4	interconnection is a way of doing that. And that	
5	answered my question and I didn't get it, but do you		5	doesn't preclude the fact that at some point we may	
6	have any, with respect to the rates that are going to		6	have to add other lines to do other things. The	
7	be paid to Tucson Electric under those circumstances,		7	projection is that, it's a projection. We believe	
8	do you have any reason that that's going to be		8	that our load is going to be to the point where our	
9	favorable to Citizens' ratepayers?		9	existing line will be -- the load will be pushing the	
10	A. I'm not following your question at all. I		10	limits of the existing line by the time we get this	
11	think I've answered it twice that the economic effect		11	one constructed.	
12	is comparable regardless of who the interconnection is		12	Q. Are there other ways you could solve that	
13	with.		13	problem?	
14	Q. Mr. Craven, if the TEP project were not		14	A. We don't believe so, in that the basic	
15	available, you're still faced with the Decision		15	purpose is or was a reliability addition, and that	
16	No. 62011 requirement that you construct a second		16	requires a second transmission line.	
17	transmission line by December 31st, 2003; correct?		17	Q. Have you explored other ways to solve that	
18	A. Yes.		18	problem?	
19	Q. How would you solve that problem?		19	A. We looked at the possibility of generation in	
20	A. The reason that one of the items included in		20	the area. However, as I said, that's not viewed as a	
21	the joint project development agreement is that if all		21	solution to the reliability problem. It's not an	
22	else fails, Tucson will construct a second 115 kV		22	energy supply problem in Nogales, it's a continuity of	
23	line.		23	service problem.	
24	Q. That's one way -- you know it's going to get		24	Q. So other than looking at the possibility of	
25	solved one way or the other, and that's one way it may		25	generation and rejecting it, have you considered any	

Page 540			Page 542		
1	get solved; correct? Just that part of the problem.		1	other options to solve that problem?	
2	I don't want to get into the peak demand problem.		2	A. No.	
3	A. Yes.		3	MR. DUFFY: Thank you, Mr. Craven.	
4	Q. Thank you.		4	I've got a few questions for Mr. Elder.	
5	If you didn't have that agreement with TEP,		5		
6	are there other ways you could solve that particular		6	CROSS-EXAMINATION OF	
7	problem?		7	DAN ELDER	
8	A. In our original proposal or original plan of		8		
9	action filed with the Commission, Citizens had		9	Q. (BY MR. DUFFY) Mr. Elder, you testified	
10	proposed to construct a stand-alone 115 kV line, the		10	earlier you personally walked, rode or flown over the	
11	principal reason being that at that point they did		11	rocks; is that correct?	
12	not -- there was not an opportunity to connect to the		12	A. That is correct.	
13	345 system in an economical manner. With Tucson's		13	Q. If I understood your prefiled testimony --	
14	proposal to construct another circuit line, that meets		14	and I'm sorry, my own note is deceiving me so it may	
15	our purposes plus theirs. Now there is an opportunity		15	be in the application, so if I'm wrong, correct me.	
16	to build a short three-mile line tied to the 345		16	But if I understand it correctly, whatever it is, you	
17	system.		17	have concluded that with respect to wildlife and	
18	Q. Turning to the other problem, if I		18	vegetation kinds of issues at least the preferred	
19	understand, and I just want to make sure, Citizens is,		19	route and the preferred alternative route, that is the	
20	if I understand it, solving two problems with this		20	west route and the central route are not significantly	
21	application. One is the compliance with the decision,		21	different; is that correct?	
22	and the other is the peak demand problem that shows up		22	A. That is correct.	
23	in your exhibit RAC-2; is that a fair		23	Q. As to human aspects, however, they are very	
24	characterization?		24	different, aren't they?	
25	A. I don't know that line will solve all the		25	A. Yes.	

13 (Pages 539 to 542)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission

Page 23 of 35

TEP and CCC
Case No. 111VOLUME III
05-17-2001

Page 679	Page 681
<p>1 A. Yes, I was.</p> <p>2 Q. At that time did you hear public comment and</p> <p>3 some parties' testimony that indicated a preference</p> <p>4 for generation solutions over a new transmission line?</p> <p>5 A. Yes, I did.</p> <p>6 Q. In your professional opinion, are there</p> <p>7 nontransmission solutions to the service quality</p> <p>8 issues that exist in Santa Cruz County?</p> <p>9 A. I would like to give a conditional response</p> <p>10 to that. I'd first like to respond from the context</p> <p>11 of the service via the existing 115 kV line, and then</p> <p>12 I'd like to respond to that by speaking to conditions</p> <p>13 once a second transmission line is in service.</p> <p>14 My professional opinion, having done the</p> <p>15 investigation that led to the order issued by the</p> <p>16 Commission to require Citizens to build a second</p> <p>17 transmission line to resolve reliability concerns for</p> <p>18 Santa Cruz County, it is my opinion that transmission</p> <p>19 is the only option available to resolve those</p> <p>20 transmission reliability issues.</p> <p>21 Let me explain. The existing substations are</p> <p>22 served by radial transmission lines. The complaints</p> <p>23 that were posed regarding quality of service were</p> <p>24 varied, but the most emphatic concerns were of the</p> <p>25 lengthy outage conditions that occurred predominantly</p>	<p>1 Commission Staff's only concern. The complaints that</p> <p>2 we've heard have been about service quality in</p> <p>3 general, and I want to come back and address that</p> <p>4 later as we look at how we move forward with the</p> <p>5 proposed second transmission line.</p> <p>6 So if a second transmission line is the</p> <p>7 solution for the transmission reliability concerns,</p> <p>8 what about the future? Are there other options</p> <p>9 available to address some of the quality service</p> <p>10 concerns? And the answer is possibly. There are a</p> <p>11 variety of solutions that may be available to deal</p> <p>12 with further system improvements dealing with service</p> <p>13 quality issues in general, not just reliability.</p> <p>14 Those may involve upgrading existing facilities, it</p> <p>15 may involve providing voltage support in the system,</p> <p>16 it may mean building additional transmission lines.</p> <p>17 It may mean consideration of local generation. And we</p> <p>18 are open to considering a variety of options as we</p> <p>19 move forward in time in looking at the future for the</p> <p>20 customers in Santa Cruz County.</p> <p>21 Q. Mr. Smith, does the Decision 62011 require</p> <p>22 those additional improvements you were talking about,</p> <p>23 or does it require only an additional line being</p> <p>24 installed at this time?</p> <p>25 A. There's I guess two answers to that question</p>
Page 680	Page 682
<p>1 when transmission outages occurred. And in fact, it</p> <p>2 is that particular component that caused the</p> <p>3 Commission to take the action to recommend a second</p> <p>4 transmission line.</p> <p>5 Citizens does have existing, a generator at</p> <p>6 Valencia substation on the southern end of their</p> <p>7 system that is connected to that existing 115 kV</p> <p>8 transmission line.</p> <p>9 It does not provide any service reliability</p> <p>10 to ensure continuity of service when there is an</p> <p>11 outage of the existing transmission line.</p> <p>12 When an outage occurs, if that generator is</p> <p>13 on line, it is going to trip off line. Therefore,</p> <p>14 what exists today is that for transmission line outage</p> <p>15 there is no continuity of service, and it takes a</p> <p>16 period of hours, a minimum of several hours, given the</p> <p>17 improvements that have been made in the system, to</p> <p>18 restore service by restarting the generator and doing</p> <p>19 the field switching to reconnect the service using</p> <p>20 distribution system facilities. So for a short-term</p> <p>21 answer, a second transmission line is the only</p> <p>22 solution to the reliability service issue.</p> <p>23 Let me also clarify, while the decision</p> <p>24 speaks to reliability of service, from a service</p> <p>25 continuity perspective, that is not the Corporation</p>	<p>1 as well.</p> <p>2 Order Decision 62011 addresses the fact that</p> <p>3 there was a settlement agreement between Citizens and</p> <p>4 the City of Nogales regarding the Nogales complaint.</p> <p>5 That included numerous distribution system upgrades.</p> <p>6 So given that context, the Corporation Commission's</p> <p>7 decision simply overlaid on top of that the need for a</p> <p>8 second transmission line for reliability service</p> <p>9 purposes.</p> <p>10 Q. Did Decision No. 62011 specify the voltage</p> <p>11 class of that required line?</p> <p>12 A. It did not. And that was by design, because</p> <p>13 we did not, again, want to prescribe a particular</p> <p>14 solution for the utility. We wanted to leave open the</p> <p>15 opportunity for it to explore a variety of options,</p> <p>16 which it has done.</p> <p>17 You have heard earlier testimony that in the</p> <p>18 early stages Citizens did consider its go-alone 115 kV</p> <p>19 second line option. But it also participated in the</p> <p>20 Southeast Arizona Transmission Study with other</p> <p>21 transmission providers in southeastern Arizona, and</p> <p>22 also included Public Service Company of New Mexico, to</p> <p>23 look at alternatives that could look at service issues</p> <p>24 beyond just those that Citizens was trying to address.</p> <p>25 And it is my opinion that those options were well --</p>

48 (Pages 679 to 682)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission

Page 24 of 35

TEP and CCC
Case No. 111VOLUME III
05-17-2001

Page 683	Page 685
<p>1 the technical assessment of those options were well</p> <p>2 documented in a report filed with the Commission, and</p> <p>3 that the project before us today is a reflection of</p> <p>4 the type of options that we viewed by being considered</p> <p>5 by Citizens as it looked for a solution.</p> <p>6 Q. Mr. Smith, were you present for the testimony</p> <p>7 of Mr. Craven when he was asked to comment on an</p> <p>8 exhibit that was included in his testimony? His</p> <p>9 testimony was marked as Exhibit C-1, and he referred</p> <p>10 to an exhibit within his testimony that was marked as</p> <p>11 Exhibit RAC-2. Were you present when he was</p> <p>12 testifying as to that exhibit?</p> <p>13 A. Yes, I was.</p> <p>14 Q. And saw that exhibit in his prefiled</p> <p>15 testimony?</p> <p>16 A. Yes, I have.</p> <p>17 Q. Prior to looking at his prefiled testimony,</p> <p>18 was Staff aware of the load projection contained in</p> <p>19 RAC-2?</p> <p>20 A. No, we were not.</p> <p>21 Q. Upon learning of those load projections and</p> <p>22 hearing Mr. Craven testify in regard to those, did</p> <p>23 that raise any additional concerns for Staff?</p> <p>24 A. Yes, it has.</p> <p>25 Q. Could you describe those?</p>	<p>1 excess of the capacity of the generators. And had we</p> <p>2 had the forecast before us back in 1999 that we have</p> <p>3 now, we would have been requesting additional</p> <p>4 generation at an earlier date. In fact, you heard</p> <p>5 testimony from Mr. Craven that their earlier forecast</p> <p>6 showed they did not reach 60 megawatts until the year</p> <p>7 2009. It's amazing what two years' difference can</p> <p>8 make in terms of system operation and in terms of our</p> <p>9 view where we're headed in serving customers.</p> <p>10 So I am very concerned not only about</p> <p>11 reliability from a transmission outage perspective,</p> <p>12 but I am very concerned about how Citizens proposes to</p> <p>13 serve its customers beyond the summer peak of 2003,</p> <p>14 even with the second transmission line.</p> <p>15 Let me put that in context for you. There's</p> <p>16 been a little bit of confusion, I believe, in terms of</p> <p>17 what this project really does. This project is no</p> <p>18 different than if they had built their own 115 kV line</p> <p>19 and connected to Tucson's system at South substation.</p> <p>20 The difference is that by building the 345 kV lines to</p> <p>21 Gateway, it brings the EHV system source closer to the</p> <p>22 load to be served. So what you have in this case is a</p> <p>23 very strong source being proposed locally to Nogales.</p> <p>24 That is a significant improvement over what would have</p> <p>25 occurred if they had had simply interconnected back at</p>
Page 684	Page 686
<p>1 A. I'll be glad to. Let me pull it in front of</p> <p>2 me.</p> <p>3 As I have previously stated, the Corporation</p> <p>4 Commission's order required the construction of a</p> <p>5 second transmission line for reliability purposes by</p> <p>6 December, 2003. What I need to tell you is that that</p> <p>7 date was arrived at through a very arbitrary fashion</p> <p>8 by looking at what Citizens felt was a reasonable time</p> <p>9 period for it to go through a siting process. It was</p> <p>10 not based upon any kind of system loading concerns at</p> <p>11 that point in time.</p> <p>12 However, if you look at RAC-2, at the load</p> <p>13 forecast, and you now see that the existing line is</p> <p>14 capable of delivering 60 megawatts and that the load</p> <p>15 forecast is likely to achieve that level of system</p> <p>16 peak by the summer of 2003, I would suggest to you if</p> <p>17 we were making our determination today, we would be</p> <p>18 making quite a different requirement of the applicant</p> <p>19 because frankly, folks, what we're faced with is not</p> <p>20 rolling blackouts in Santa Cruz County; we're talking</p> <p>21 about total blackouts when the load exceeds the</p> <p>22 60 megawatts capability of that line.</p> <p>23 Let me explain. You heard earlier for</p> <p>24 transmission outage that the area goes black. They do</p> <p>25 have local generation. It cannot serve loads in</p>	<p>1 South substation and built a 50- to 60-mile 115 kV</p> <p>2 line.</p> <p>3 Q. Mr. Smith, if I could interject here. There</p> <p>4 were some questions that the Committee members asked</p> <p>5 at the last hearing. One of them, Mr. Palmer asked if</p> <p>6 building the additional 115 kV line only, would double</p> <p>7 the capacity to Citizens. Could you answer that</p> <p>8 question?</p> <p>9 A. Yes, be glad to. The answer is no. The</p> <p>10 existing project has a 100 megawatt delivery</p> <p>11 capability from Gateway to the Valencia substation</p> <p>12 over a new 115 kV line. However, when you lose that</p> <p>13 115 -- new 115 kV line, Citizens is still limited to</p> <p>14 the ability of serving 60 megawatts over the existing</p> <p>15 line. So what we really have for those that have been</p> <p>16 following Staff's transmission concerns over the last</p> <p>17 few months, we have been saying that we have three</p> <p>18 transmission import constraint zones in the state.</p> <p>19 I'm here to tell you we have a fourth, and that is in</p> <p>20 Santa Cruz County, because the capacity, the</p> <p>21 transmission import capacity, even with this second</p> <p>22 transmission line being constructed, is 60 megawatts.</p> <p>23 We want to see a reliable system plan that</p> <p>24 ensures that the load in excess of 60 megawatts moving</p> <p>25 forward in time can be served reliably and at a</p>

49 (Pages 683 to 686)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission

Page 25 of 35

TEP and CCC
Case No. 111VOLUME III
05-17-2001

<p>Page 687</p> <p>1 cost-effective manner. As I described earlier, there 2 are a variety of options available now that we have a 3 second transmission line to the area. But that is a 4 major concern I have that's new that did not exist 5 when we originally had the order issued by the 6 Commission. 7 Q. Another question that the Committee asked at 8 the last proceeding was posed by Committee Member 9 Tobin. He did want the parties to address what the 10 impact would be of not granting the certificate at 11 this point, but instead waiting for the NEPA 12 evaluation. Would you comment on that? 13 A. I believe we've heard some significant 14 testimony that delays in siting this project and 15 waiting for the NEPA process to run its course and 16 then completing this siting would ultimately result in 17 delay of the service date for the second transmission 18 line. 19 I think the evidence that we have on the 20 record in RAC-2 says that is not a prudent choice. 21 What you are basically doing is dictating that by our 22 slow action on the needed facility, that we are 23 ensuring there are going to be some serious problems 24 serving the customers in Santa Cruz County beyond the 25 summer of 2002.</p>	<p>Page 689</p> <p>1 today, but without the fuel supply for the generators 2 that were used to restore service. So that is one of 3 the principal reasons that we would recommend, given 4 all other factors being the same, the preference of 5 the alternate route for the 115 kV line. 6 Now, that can be mitigated to some degree by 7 the offsets that we have recommended. 8 The second concern that we have regarding the 9 preferred 115 kV route is one that deals with the 10 double circuit proposal for four-tenths of a mile 11 approaching Valencia substation. It is simply not 12 prudent and proper for Staff to agree to a double 13 circuit 115 kV line that is the principal cause for us 14 being before the Siting Committee requiring a second 15 transmission line to resolve reliability. 16 Q. Mr. Smith, to put that in context, if someone 17 were to follow along on applicant's exhibit, would 18 that be Exhibit A-3.1? 19 A. Yes, if you would look at Exhibit A-3.1 in 20 the application. In this exhibit are the two routes 21 considered and presented by the applicant between the 22 Gateway substation and the Valencia substation for the 23 new 115 kV line. The red routes are the alternative 24 routes that Staff indicated we would have a preference 25 for. The black dashed lines are the applicant's</p>
<p>Page 688</p> <p>1 Q. Mr. Smith, if Staff was called upon to make a 2 recommendation to the Commission whether or not to 3 waive the December 31st, 2003 in-service requirement 4 that's currently the Commission's last word on this 5 issue, what would Staff's recommendation be? 6 A. Given the facts as I know them today, I would 7 not be recommending delay; in fact, I would be 8 encouraging acceleration. 9 Q. Moving on to some more technical issues with 10 the 115 kV line. Do you have a preference for the 11 route of the Citizens 115 kV line? 12 A. The 115 kV route preference that Staff would 13 offer relates a little bit to two factors. One is the 14 issue that we began with Staff's testimony today, and 15 that is our concern about routing a transmission line 16 along an existing gas pipeline. Where there are 17 options available to do otherwise and the public 18 supports those alternate routes, we think that is a 19 wise choice to make. 20 Let me give that a little more context 21 regarding the 115 kV line. If you choose the 22 preferred route from Gateway to Valencia, it is along 23 an existing gas pipeline. If that gas pipeline were 24 to explode and take the new transmission line out of 25 service, you're left with conditions that we have</p>	<p>Page 690</p> <p>1 preferred route, and if you will notice, they are 2 aligned with the yellow dotted lines that represent 3 the existing gas line and there are some circles that 4 have a number in it. And if you look to the 5 right-hand side where it has 40, 50 and 60 encircled, 6 that is the area that we are talking about in 7 particular. 8 The section that runs left and right to the 9 west of the indicator for 60 is where the applicant is 10 proposing to build a double circuit. The red line 11 that runs to the north is the existing 115 kV line and 12 it is that segment that the applicant has proposed be 13 double circuit, the existing 115 plus the new 115, and 14 a corner with the existing one gas pipeline. Talk 15 about putting all your eggs in one basket. I'm not 16 sure that is a good, reliable choice. 17 Now, Staff has had discussions with the 18 applicant about going ahead and having gas line 19 offsets with the transmission line and about not 20 having a double circuit line, but having two separate 21 lines along that same corridor. Staff is willing to 22 consider that from a technical perspective, but I 23 would ask the Committee to give some thought to the 24 environmental and aesthetic impact that that would 25 pose.</p>

50 (Pages 687 to 690)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission

Page 26 of 35

TEP and CCC
Case No. 111VOLUME III
05-17-2001

<p>Page 719</p> <p>1 all over again, only it will be a bigger picture. 2 Q. Mr. Smith, those distribution system 3 improvements do not change, I would underline 4 distribution system improvements do not change the 5 need for a second transmission source? 6 A. Correct. 7 Q. Finally, Mr. Smith, if you would turn to 8 Page 7 of your comments. With some trepidation, I 9 will state that at least on my copy this occurs at 10 Lines 10 to 14. 11 You have the statement there that Staff 12 supports approval of both a primary and alternate 13 route for the 345 kV line. Could you explain to the 14 Committee why Staff supports the approval of both the 15 preferred and the preferred alternative route? 16 A. We support the preferred route based on the 17 evidence that has been presented in the case and that 18 we've heard testimony before the Committee. We 19 support the inclusion of a preferred alternative route 20 based upon the fact that the environmental work is not 21 yet complete, and we do not want to presume that the 22 western preferred route is void of environmental 23 concerns. If that should surface, we want to ensure 24 that the applicants have the ability to move forward 25 with an alternative route.</p>	<p>Page 721</p> <p>1 you're supporting? 2 A. Given the proposal of a new generator 3 connecting to the existing 115 kV system, without the 4 addition of a second transmission line would likely 5 pose the same deficiency that the existing units at 6 Valencia pose, and that is local generators connected 7 to a radial transmission line are going to trip off 8 line for transmission outage, and that means there 9 would not be continuity of service for the outage of a 10 transmission line. 11 Depending on where that generation was 12 located, it might change the time required to restore 13 service following the transmission outage. In fact, 14 one of the benefits that came from our investigation 15 of the prior concerns of Citizens' system is we were 16 able to -- they had been experiencing outages that ran 17 up to six hours in duration for transmission line 18 outage. That's how long it took them to get the 19 generator restarted, reconfiguring the distribution 20 system to get all of the customers back in service. 21 By taking the utility through the steps of 22 documenting operating procedures to be used to restore 23 service following transmission outages, ensuring that 24 the generators had an alternate backup to their black 25 start capability, and requiring that the existing</p>
<p>Page 720</p> <p>1 The real key, caveat that we offer in this 2 paragraph is to be found on Line 13, where we say we 3 feel it's appropriate, should the preferred route be 4 found to be unacceptable during DOE's environmental 5 assessment. That's the context of our giving support 6 for moving forward with the preferred alternate route. 7 MR. GRANT: Thank you very much, Mr. Smith. 8 MEMBER TOBIN: Cece, would you mark that. 9 CHMN. WOODALL: Mr. Meek. 10 MR. MEEK: Thank you, Madam Chairman. I have 11 a couple questions for Mr. Smith. 12 13 CROSS-EXAMINATION OF 14 JERRY SMITH 15 16 Q. (BY MR. MEEK) Good afternoon, Mr. Smith. 17 A. Good afternoon. 18 Q. I'd like to return briefly to your discussion 19 about generation as an alternative to the reliability 20 issues. I think it's clear you think the existing 21 facility does not meet reliability requirements for 22 Citizens' system. Let's suppose hypothetically that 23 somebody came along for a proposal for brand-new 24 generation. What would the configuration of that 25 facility have to be to meet reliability standards that</p>	<p>Page 722</p> <p>1 units be placed on spinning operation during storm 2 season, we ensure that we could have shorter 3 restoration of service. I think that same type of 4 restoration of service will be likely if you connected 5 new generators to that same system. 6 Q. Wouldn't it be possible to build generators 7 that were not connected to the existing transmission 8 system, stand-alone units? 9 A. Certainly you could have generators that were 10 serving load that is not connected to the grid, but 11 those same customers would be subject to an outage of 12 that generator and not have the benefit of the service 13 from the interconnected grid. 14 Q. If someone were to propose a merchant plant 15 in that area, would it be the Staff's position that 16 that plant would have to be connected to the grid? 17 A. It would depend on the size. If we're 18 talking about a plant that's less than 100 megawatts 19 in size, it could very easily connect to the existing 20 transmission system and the proposed transmission line 21 without going through a siting process. What is yet 22 to be determined is whether a local generator 23 connected to that interconnected system could ride out 24 a disturbance on the transmission system. 25 It would take some pretty sophisticated</p>

58 (Pages 719 to 722)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission
Page 27 of 35

TEP and CCC
Case No. 111

VOLUME III
05-17-2001

Page 723	Page 725
<p>1 control equipment to ensure that they could withstand 2 that type of disturbance, but certainly that is among 3 the options that we're leaving open for Citizens and 4 market participants to consider. 5 Q. What I was getting at was that if someone 6 were to propose a fairly large scale system, 7 generation project built on this side of the border, 8 with presumably commercial capabilities, based on the 9 Staff's previous recommendations on commercial 10 generators isn't it likely that you would suggest that 11 the project ought to be connected to the grid to the 12 north? 13 A. I would suggest that a large generator plant 14 in excess of 100 megawatts would properly connect to 15 the EHV transmission system rather than to Nogales' 16 115 kV system. And in fact that's exactly what this 17 project offers, is the opportunity for such a plant to 18 interconnect with the two 345 kV circuits from Gateway 19 back to South, and Tucson or to the two 345 kV ties 20 once they were approved and interconnected to Mexico. 21 Q. So by building a generating project, we're 22 not necessarily avoiding the transmission issue? 23 A. I have given testimony that generation of any 24 size is not a solution to the transmission reliability 25 issue being dealt with in Nogales.</p>	<p>1 A. If we look at the fact that the load will 2 exceed the existing transmission line by the summer of 3 2003, there is not a power plant that would have to go 4 through the siting process that would have ample lead 5 time to meet that need. 6 MR. MEEK: Thank you, that's all. 7 CHMN. WOODALL: Mr. Duffy. 8 MR. DUFFY: Thank you. I have one question 9 for Mr. Fronterhouse. I didn't want him to be too 10 bored. 11 12 CROSS-EXAMINATION OF 13 TERRY FRONTERHOUSE 14 15 Q. (BY MR. DUFFY) I kind of want to understand, 16 on -- you have Exhibit S-2 handy? 17 A. Yes. 18 Q. The 100-foot offset that's from the edge of 19 the right-of-way of the gas right-of-way to the actual 20 structure that is the pole of the support structure, 21 is that the 100 feet we're talking about? 22 A. Yes, it is. 23 Q. It doesn't matter whether it's a lattice 24 structure or some other kind of structure? 25 A. No, not really. It's just from the edge.</p>
Page 724	Page 726
<p>1 Q. We heard some mention earlier today on the 2 Maestro project. Has either that -- and apparently 3 that project is before DOE, from what we heard earlier 4 today. Does that project or any similar project have 5 an application before the Commission today that would 6 might the deadlines set up in the 62011? 7 A. We have no such application before the 8 Commission or the Siting Committee. I do understand 9 that it has filed for the presidential permit, but I 10 can tell you we have had informal conversation via 11 letters and a few phone calls regarding a variety of 12 generation projects related to the Maestro Group's 13 development intent. We have encouraged those 14 participants to move forward as they felt they could 15 justify their projects, and we have even suggested to 16 those parties that we feel the project that's before 17 this Committee today is an excellent precursor to 18 making their projects viable and provide a means for 19 them to deliver to a larger market. 20 Q. In your professional opinion, at this stage 21 of the game could anybody file a proposal for a 22 generating project that would meet either the 23 Commission's deadline for Citizens Communications or 24 for that matter the growth load projections that are 25 reflected in RAC-2?</p>	<p>1 And then of course we use the calculation to do the 2 triangle to the wires. So to get the distance you 3 have to get the distance there, too, because even 4 though a pipeline ruptured, they don't happen every 5 day, it is a possibility, it has happened, you have to 6 have a far enough distance so that you don't damage 7 the structure or the wires that are on the structure. 8 Q. So you have to take into account how far out 9 the wires are as well? 10 A. That's correct. 11 MR. DUFFY: Thank you. Now I have a few 12 questions for Mr. Smith. 13 14 CROSS-EXAMINATION OF 15 JERRY SMITH 16 17 Q. (BY MR. DUFFY) With the exception of 18 Mr. Grant's last question, I just kind of wanted to 19 make sure. With the exception of answering his last 20 question about the 345 route, you were talking about 21 the alternative route in and around, that is between 22 the Gateway and Valencia substation, correct? 23 A. That is correct. In fact, I'm aware there 24 may be some confusion about some of my earlier 25 comments when I was talking about Staff willing to</p>

59 (Pages 723 to 726)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission
Page 28 of 35

TEP and CCC
L-00000C-01-0111, etc.

Volume IV
06-11-2001

	Page 736
1	BEFORE THE POWER PLANT AND TRANSMISSION
2	LINE SITING COMMITTEE
3	
4	IN THE MATTER OF THE JOINT)
	APPLICATION OF TUCSON ELECTRIC POWER)
5	COMPANY AND CITIZENS COMMUNICATIONS)
	COMPANY, OR THEIR ASSIGNEE(S), FOR A)
6	CERTIFICATE OF ENVIRONMENTAL)
	COMPATIBILITY FOR A PROPOSED 345KV) CASE NO. 111
7	TRANSMISSION LINE SYSTEM FROM TUCSON)
	ELECTRIC POWER COMPANY'S EXISTING)
8	SOUTH 345 KV SUBSTATION IN SEC. 36,) DOCKET NOS.
	T.16S., R.13E., SAHUARITA, ARIZONA,) L00000C-01-0111
9	TO THE PROPOSED GATEWAY 345/115 KV) L00000F-01-0111
	SUBSTATION IN SEC. 12, T.24S.,)
10	R.13E., NOGALES, ARIZONA, WITH A 115)
	KV INTERCONNECT TO THE CITIZENS)
11	COMMUNICATIONS COMPANY'S 115 KV)
	VALENCIA STATION IN NOGALES, ARIZONA,)
12	WITH A 345KV TRANSMISSION LINE FROM)
	THE PROPOSED GATEWAY SUBSTATION)
13	SOUTH TO THE INTERNATIONAL BORDER)
	IN SEC. 13, T.24S., R.13E.)
14)
15	At: Phoenix, Arizona
16	Date: June 11, 2001
17	Filed:
18	REPORTER'S TRANSCRIPT OF PROCEEDINGS
	VOLUME IV
19	(Pages 736 through 992)
20	ARIZONA REPORTING SERVICE, INC.
	Court Reporting
21	Suite Three
	2627 North Third Street
22	Phoenix, Arizona 85004-1103
23	By: CECELIA BROOKMAN, RPR
	Prepared for: CCR No. 50154
24	
25	

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission

Page 29 of 35

TEP and CCC
L-00000C-01-0111, etc.Volume IV
06-11-2001

Page 853	Page 855
1 projections were arrived at, and that those might 2 better be directed to the applicant's witnesses. 3 MR. MAGRUDER: I do teach forecasting and 4 reduction in my MBA courses, and upon reading the 5 transcript, I do have lots of questions. 6 CHMN. WOODALL: To the extent the applicant 7 puts on a rebuttal case and those issues come up, 8 you'll have an opportunity to ask them if they come up 9 in his rebuttal case. 10 Having said that, it's about time for our 11 noon break. I'm wondering, Mr. Magruder, how many 12 more questions you have. 13 MR. MAGRUDER: They're getting to be shorter. 14 CHMN. WOODALL: Would this be a convenient 15 time to break? 16 MR. MAGRUDER: Yes, it would be a convenient 17 time. 18 CHMN. WOODALL: We'll resume at 115. 19 (The lunch recess ensued from 12:04 p.m., to 20 1:25 p.m.) 21 CHMN. WOODALL: Do we have any last minute 22 procedural matters? 23 If not, Mr. Magruder, are you prepared to 24 resume with your cross-examination? 25 MR. MAGRUDER: Yes, I have exhibits I	1 115 kV line to Valencia. 2 Q. Isn't it customary for lines to be rated in 3 proposals so that you have an idea what the capacity 4 is that's going to be -- of the electricity that's 5 going to be transmitted on that line? 6 A. (BY MR. JERRY SMITH) It's a fairly common 7 practice to identify the rating. 8 Q. Page 438 of Mr. Craven's proposal says: The 9 project development agreement with Tucson provides us 10 with 100 megawatts of transmission capacity on their 11 line. And I agree with the 100 megawatt statement. 12 What I didn't see was how that 100 megawatts 13 was going to make it to Citizens Utilities for use at 14 the Valencia substation. 15 A. (BY MR. JERRY SMITH) Let me suggest, if you 16 want verification of that you might want to ask the 17 applicant. 18 Q. I hope they would bring it up then in their 19 rebuttal. 20 A. (BY MR. JERRY SMITH) I would say this, 21 Mr. Magruder: The 115 kV system is only capable of 22 serving 60 megawatts of load irrespective of whatever 23 the line rating is from Gateway to Valencia, because 24 the system must be able to withstand the outage of 25 that new line, and we do have testimony and evidence
Page 854	Page 856
1 distributed. When we -- 2 MR. MEEK: Excuse me, Madam Chairman. I 3 haven't been favored with the latest pile of Magruder 4 exhibits. 5 CHMN. WOODALL: Mr. Magruder, I wonder if you 6 could give Mr. Meek a copy. You'll make sure that he 7 has a copy of that before you refer to it? 8 MRS. MAGRUDER: Yes. 9 CHMN. WOODALL: Thank you so much. 10 Q. (BY MR. MAGRUDER) Mr. Smith, in the 11 testimony of Mr. Craven, he indicated on Page 437, 12 Line 19, talks about the concept of 60 megawatts at 13 the 115 and you were the one who indicated 100 14 megawatts at the 115 interface between Gateway and 15 Citizens. 16 Where in the proposal does it say it's going 17 to be 100 megawatts delivered to Citizens' Valencia 18 substation? Do you know of anyplace? 19 A. (BY MR. JERRY SMITH) I cannot cite specific 20 reference in the application. I do know we have a 21 data request of the applicant, and that was one of the 22 responses we got from the applicant. We also heard in 23 testimony from the applicant that they had contractual 24 arrangements for 100 megawatts to be delivered at 25 Gateway, and that that could be delivered over the new	1 that the existing line can only accommodate 60 2 megawatts. 3 Q. Let me clarify. In other words, the wires 4 that connect Gateway and Valencia will never be 5 allowed to carry more than 60 megawatts; is that 6 correct? 7 A. (BY MR. JERRY SMITH) No, I did not say that. 8 Q. How many megawatts can be transferred on the 9 line between Gateway and Valencia substation? 10 A. (BY MR. JERRY SMITH) It's my understanding 11 the rating of that facility is to be 100 megawatts. 12 However, the 115 kV system serving Santa Cruz County 13 is only capable as a system of serving 60 megawatts 14 because it must meet the N-1 outage criteria for the 15 loss of the new line. 16 Q. Could you please further explain what the N-1 17 means in this case? 18 A. (BY MR. JERRY SMITH) With the proposed 19 project, you have two lines, two 115 kV lines serving 20 the Citizens Utilities customers in Santa Cruz County, 21 the existing line, which is rated at 60 megawatts, and 22 the new line from Gateway to Valencia, which is rated 23 100 megawatts. If you lose the new line, you have the 24 ability to serve only 60 megawatts over the existing 25 line, and in fact, it is that concern that is new to

31 (Pages 853 to 856)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission

Page 30 of 35

TEP and CCC
L-00000C-01-0111, etc.Volume IV
06-11-2001

Page 857	Page 859
1 these proceedings that did not exist at the time the 2 Arizona Corporation Commission gave its decision 3 ordering construction of a second transmission line. 4 Q. Would you have any recommendations that could 5 solve that dilemma? 6 A. (BY MR. JERRY SMITH) Staff has a variety of 7 solutions that we consider as acceptable. We have 8 intentionally, in our proposed condition, left that 9 question open-ended for the utility to explore what it 10 views to be the best investment opportunity to meet 11 the load requirements, but I can give you some 12 examples. 13 The first would be they could upgrade the 14 existing transmission line, whatever that entails, 15 such that it had a 100 megawatt rating, thereby 16 rendering the network serving capacity to 100 17 megawatts. And another option, with that first 18 option, it might mean actually doing some line 19 construction, or as an alternative, because a 20 60 megawatt criteria is not necessarily a line 21 capacity problem, they could deal with the voltage 22 issues by putting in voltage equipment. 23 Option two might consist of a third 115 kV 24 line. If that was the proposal I would suggest the 25 best source for connecting that third 115 kV line	1 Q. So if a third line went, then, from Gateway 2 to Sonoita, that would then be satisfactory and meet 3 the N-1 criteria? 4 A. I would say we would have to see studies that 5 indicate flow wise that that is a sound system, but 6 just subjectively doing some back-of-the-envelope 7 planning, I would say it would appear to be a good 8 solution. 9 Q. Now I understand the word hypothetical, let 10 me ask you a hypothetical on the same situation. 11 Instead of the Gateway substation, if it was a power 12 generation station rated at 100 megawatts, would that 13 also then meet the N-1 criteria? 14 A. I feel it may be inappropriate for Staff to 15 speak about generation plant solutions, given we're 16 aware of a project that is being proposed that may 17 come before this Staff, this Committee, and 18 Commission, and I'm not sure it's prudent for Staff to 19 comment on those types of projects without proper 20 evidence of facts dealing with N-1 of those projects. 21 Q. Understanding that I thought the N-1 strategy 22 was feasible, how many power plants would you have? 23 A. (BY MR. JERRY SMITH) If you're asking Staff 24 to support generation as a solution to N-1 criteria, I 25 would say Staff has taken a position that we need
Page 858	Page 860
1 would be Gateway, because it has expansion capability 2 that the delivery from the Nogales tap that is the 3 delivery point out of the Western Area Power 4 Administration does not have. The Western Area Power 5 Administration system is fully committed capacity wise 6 and does not have the expansion capability that this 7 project offers at Gateway. 8 Those are transmission solutions that Staff 9 would certainly entertain and consider to be 10 reasonable solutions. 11 Q. Mr. Smith, on your second solution to add a 12 third 115 kV line, would it be satisfactory if it went 13 from Gateway to one of the substations such as 14 Sonoita, which is one station north of the Valencia 15 substation, would that also be an acceptable solution? 16 A. (BY MR. JERRY SMITH) Yes. In fact, I would 17 suggest from a planning perspective that would be a 18 prudent choice, because it offers the ability -- it 19 could offer the ability to improve the reliability 20 over just connecting a second line -- excuse me. 21 Three lines at Valencia. It would offer a loop system 22 between Gateway, Sonoita, and Valencia, and could have 23 the net effect of avoiding the need to upgrade the 24 existing transmission line between Sonoita and 25 Valencia.	1 adequate transmission capacity to meet the N-1 2 criteria irrespective of generation. 3 Q. Do I understand, then, that if the Gateway 4 substation was changed hypothetically with a 5 generating station, the same electrical transmission 6 characteristics would be the end result? 7 A. (BY MR. JERRY SMITH) For Citizens system, 8 yes, that would be Staff's judgment. 9 Q. That's what I was looking for. Thank you. 10 If we had 100 megawatt capability in Santa 11 Cruz County, would that solve the long-term growth 12 projections based on anybody's forecast, or most 13 people's forecast for the next decade or two? 14 MS. WOLFE: Objection. Could the question be 15 restated as to where exactly that 100 megawatt 16 capability would be? 17 CHMN. WOODALL: Please rephrase, 18 Mr. Magruder. 19 Q. (BY MR. MAGRUDER) If 100 megawatts came from 20 Gateway station to, let's say, Sonoita and Valencia 21 substation, would that be enough to meet the general 22 growth demands for this county? 23 A. (BY MR. JERRY SMITH) Let me better 24 understand the question you asked, Mr. Magruder. Are 25 you talking about Citizens' system consisting of two

32 (Pages 857 to 860)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission

Page 31 of 35

TEP and CCC
L-00000C-01-0111, etc.Volume IV
06-11-2001

<p style="text-align: right;">Page 861</p> <p>1 115 kV lines or three 115 kV lines?</p> <p>2 Q. Mr. Smith, I don't think the present 115 kV</p> <p>3 line is going to go away. I think in fact Mr. Craven</p> <p>4 in his testimony indicated that's how he intends to</p> <p>5 buy electricity, and not use the TEP line. So I'm</p> <p>6 pretty sure that line is going to stay. Do you</p> <p>7 remember that portion of testimony?</p> <p>8 A. (BY MR. JERRY SMITH) I remember that</p> <p>9 portion. I'm not sure I would agree that's the</p> <p>10 characterization that I heard. I believe the</p> <p>11 transmission capacity that Citizens can take from</p> <p>12 Western is limited and cannot achieve the long-term</p> <p>13 growth projected for the area.</p> <p>14 Q. But at least if you get its base load or up</p> <p>15 to 60 megawatts from its present line?</p> <p>16 A. (BY MR. JERRY SMITH) I'm not sure what the</p> <p>17 contract limit is with Western Power Administration.</p> <p>18 Q. Well, okay.</p> <p>19 A. (BY MR. JERRY SMITH) It is certainly no more</p> <p>20 than 60 megawatts. I suspect it is less than that.</p> <p>21 Q. So if it could get 60 watts from that</p> <p>22 transmission line, and 100 watts from either a line</p> <p>23 going into Sonoita and/or Valencia, would that 160</p> <p>24 watts then provide enough capacity for Santa Cruz</p> <p>25 County?</p>	<p style="text-align: right;">Page 863</p> <p>1 MS. WOLFE: Objection; calls for speculation.</p> <p>2 CHMN. WOODALL: Sustained.</p> <p>3 Q. (BY MR. MAGRUDER) When people have firm</p> <p>4 contracts, what percentage of the time do they not</p> <p>5 have delivery, approximately, in this state?</p> <p>6 A. (BY MR. JERRY SMITH) A firm contract implies</p> <p>7 deliverability, otherwise it's not firm.</p> <p>8 Q. In other words, it's close to 100 percent?</p> <p>9 A. (BY MR. JERRY SMITH) Firm means that service</p> <p>10 cannot be interrupted by operator intervention. It</p> <p>11 can only be interrupted as a result of a natural</p> <p>12 system event, and that is a distinction from a power</p> <p>13 plant outage.</p> <p>14 Q. And how often do power plants have natural</p> <p>15 outages or failure?</p> <p>16 MS. WOLFE: Objection as to the relevance of</p> <p>17 this line of questioning.</p> <p>18 CHMN. WOODALL: Sustained.</p> <p>19 Mr. Magruder, can you connect this up with</p> <p>20 something that's material with respect to this</p> <p>21 application?</p> <p>22 MR. MAGRUDER: What I'm trying to compare is</p> <p>23 is it a transmission line problem or a generation line</p> <p>24 problem that we're talking about, and I believe that</p> <p>25 generation reliability is higher than the transmission</p>
<p style="text-align: right;">Page 862</p> <p>1 A. (BY MR. JERRY SMITH) From a transmission</p> <p>2 delivery standpoint it's immaterial what the source of</p> <p>3 that energy and demand is; what is important is the</p> <p>4 deliverability. And if you're asking me do I think a</p> <p>5 generation plant at Valencia can serve to be as</p> <p>6 reliable as an EHV, extra high voltage transmission</p> <p>7 interconnection at Gateway, I would say that is</p> <p>8 something that would require some study to determine</p> <p>9 the reliability merits of one versus the other.</p> <p>10 Q. For the average medium-size power plant how</p> <p>11 many hours a year are they out, do they have outages?</p> <p>12 MS. WOLFE: Objection. Please tell us what a</p> <p>13 medium power plant is.</p> <p>14 MR. MAGRUDER: Let's say 100, 200 megawatt,</p> <p>15 average size power plant.</p> <p>16 MR. JERRY SMITH: I would say that question</p> <p>17 is very difficult today to answer, because we're</p> <p>18 entering a market environment where power plants have</p> <p>19 been known to withhold their delivery. They no longer</p> <p>20 have an obligation to serve. And I would characterize</p> <p>21 those plants as being very suspect in terms of the</p> <p>22 dependability of their output to the consumer.</p> <p>23 Q. (BY MR. MAGRUDER) If you have a firm</p> <p>24 contract how many hours a year would you not have</p> <p>25 delivery from the power plant?</p>	<p style="text-align: right;">Page 864</p> <p>1 reliability. Could I ask that question?</p> <p>2 CHMN. WOODALL: Go ahead.</p> <p>3 Q. (BY MR. MAGRUDER) What has a higher</p> <p>4 reliability, generation reliability or transmission</p> <p>5 reliability in this state?</p> <p>6 A. (BY MR. JERRY SMITH) I would say that in</p> <p>7 this state probably we have comparable outage results</p> <p>8 for transmission and generation. That is not always</p> <p>9 the case. The more strain the transmission system</p> <p>10 has, the more vulnerable it is to outages. And when</p> <p>11 you look on the average nationally power plants</p> <p>12 generally have, historically have had a higher</p> <p>13 capacity factor than a transmission line would. But</p> <p>14 as I stated before, in a merchant power plant</p> <p>15 environment, that is yet to see that that is factual</p> <p>16 for moving forward in time.</p> <p>17 Mr. Magruder, it appears from your line of</p> <p>18 questioning that you're trying to address whether we</p> <p>19 have a supply problem or delivery problem. And I'm</p> <p>20 going to tell you it's this Staff member's opinion we</p> <p>21 have a delivery problem. It matters not where the</p> <p>22 source is, we have a delivery problem.</p> <p>23 Q. Is the delivery problem greater on the 65</p> <p>24 mile line or a three- to six-mile line?</p> <p>25 MS. WOLFE: Objection; vague.</p>

33 (Pages 861 to 864)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission

Page 32 of 35

TEP and CCC
L-00000C-01-0111, etc.Volume IV
06-11-2001

<p style="text-align: right;">Page 865</p> <p>1 CHMN. WOODALL: Do you understand the</p> <p>2 question, Mr. Smith?</p> <p>3 MR. MAGRUDER: Of the same characteristics</p> <p>4 line.</p> <p>5 MR. JERRY SMITH: It depends on what's at</p> <p>6 each end of the line. If all that's on the end of the</p> <p>7 line is a power plant, it is not secure, is that there</p> <p>8 is sufficient transmission capacity to deliver to the</p> <p>9 underlying 115 system independent of operation of the</p> <p>10 plant.</p> <p>11 Q. (BY MR. MAGRUDER) The reason I wanted to get</p> <p>12 on the power plant issue, but don't power plants have</p> <p>13 more than one generator, and don't they have</p> <p>14 redundancy and the same type of redundancy we talked</p> <p>15 about, the second 115 kilovolt line a little while</p> <p>16 ago? But would that kind of redundancy also affect</p> <p>17 and improve the reliability of a power plant?</p> <p>18 A. (BY MR. JERRY SMITH) The power plant segment</p> <p>19 of the industry has multiple units and has set aside</p> <p>20 what is called reserves so that they can lose a power</p> <p>21 plant, a unit, and still continue to deliver the full</p> <p>22 output to the load.</p> <p>23 That same phenomena exists in the</p> <p>24 transmission system, and it exhibits itself in terms</p> <p>25 of the N-1 criteria which says you have to have enough</p>	<p style="text-align: right;">Page 867</p> <p>1 supply problem that we're concerned about, it's a</p> <p>2 deliverability problem. And in fact Staff, in prior</p> <p>3 hearings, has taken a very strong position supporting</p> <p>4 construction of power plants within transmission</p> <p>5 constrained import zones in this state, and we would</p> <p>6 do the same for future power plant in this area. But</p> <p>7 we want to assure that there is sufficient</p> <p>8 transmission capacity to serve all of the load in</p> <p>9 Citizens' service area in Santa Cruz County without</p> <p>10 having to rely on any particular generation resource</p> <p>11 being available. Because to do so puts the consumer</p> <p>12 at risk if they lose that supply and there's not</p> <p>13 sufficient transmission, then it means a blackout.</p> <p>14 CHMN. WOODALL: Thank you, Mr. Smith.</p> <p>15 Thank you, Mr. Magruder. Please proceed.</p> <p>16 Q. (BY MR. MAGRUDER) Mr. Smith, if you lost a</p> <p>17 whole generation plant, which would probably be a low</p> <p>18 probability, and you still had the 60 megawatts coming</p> <p>19 in on the present power line, would you have 60</p> <p>20 megawatts then available for the Citizens service</p> <p>21 area?</p> <p>22 A. (BY MR. JERRY SMITH) In the scenario you</p> <p>23 describe, if we lose a power plant at Gateway that has</p> <p>24 two 115 kV transmission lines to Citizens' system, and</p> <p>25 what that power plant outage does is leave all of</p>
<p style="text-align: right;">Page 866</p> <p>1 transmission capacity in the system to be able to</p> <p>2 withstand the loss of a single transmission line and</p> <p>3 still serve the load. So from that standpoint,</p> <p>4 they're very comparable technologies and implications</p> <p>5 from a reliability standpoint.</p> <p>6 Q. Are you trying -- are you saying that two</p> <p>7 transmission lines are more or less reliable than,</p> <p>8 let's say, four generators at a power station?</p> <p>9 MS. WOLFE: Objection; irrelevant.</p> <p>10 MR. MAGRUDER: I'm talking from a redundancy</p> <p>11 viewpoint here.</p> <p>12 CHMN. WOODALL: Sustained. Could you ask</p> <p>13 another question, Mr. Magruder?</p> <p>14 I had a question for Mr. Smith. Staff has</p> <p>15 testified that they support this application</p> <p>16 because -- for a second line because, one, there was a</p> <p>17 Commission order, and two, based upon evidence that</p> <p>18 came through the hearing that -- through Mr. Craven,</p> <p>19 concerning increased demand or load in the future, is</p> <p>20 that correct?</p> <p>21 MR. JERRY SMITH: That's correct.</p> <p>22 CHMN. WOODALL: If we assume that there's</p> <p>23 another power plant that can serve that load, is Staff</p> <p>24 still supporting this application?</p> <p>25 MR. JERRY SMITH: Yes, because it's not a</p>	<p style="text-align: right;">Page 868</p> <p>1 Santa Cruz County load served by the existing 115 kV</p> <p>2 transmission line, that limitation is 60 megawatts,</p> <p>3 and it is that concern that leaves Staff concerned</p> <p>4 that there is transmission service at Gateway, not</p> <p>5 just the power plant.</p> <p>6 Q. You also realize there's 48 megawatts of</p> <p>7 backup or peaking power also available?</p> <p>8 A. (BY MR. JERRY SMITH) I would agree there's</p> <p>9 48 megawatts of backup. I would not characterize that</p> <p>10 generation as being suitable for running on a normal</p> <p>11 basis to meet load, because in its history, it has</p> <p>12 been shown that that plant will trip off line for</p> <p>13 system disturbances.</p> <p>14 Now, we certainly do not have at this point</p> <p>15 technical studies that would describe the performance</p> <p>16 of those units with the network configuration this</p> <p>17 application proposes. Certainly, that is an option</p> <p>18 that Staff would entertain as a temporary measure to</p> <p>19 allow us to get past the 60 megawatts in the</p> <p>20 short-term, but we would not view that as a long-term</p> <p>21 acceptable solution.</p> <p>22 Q. Do you know how many days in the year 2000</p> <p>23 load above 4,000 megawatts were experienced by</p> <p>24 Citizens Utilities?</p> <p>25 A. (BY MR. JERRY SMITH) I have no idea.</p>

34 (Pages 865 to 868)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission
Page 33 of 35

TEP and CCC
L-00000C-01-0111, etc.

Volume IV
06-11-2001

<p>Page 869</p> <p>1 Q. The data that I received from Citizens was 2 four days and that would be four afternoons. 3 A. (BY MR. JERRY SMITH) I would suggest, 4 Mr. Magruder, that's four days the customers would be 5 without power. 6 Q. They also operated turbines during both of 7 those days as spinning reserve. Is that a reasonable 8 mitigation problem? 9 CHMN. WOODALL: Mr. Magruder, you need to ask 10 him if he knows that, then you can proceed with your 11 question. 12 Q. (BY MR. MAGRUDER) Do you know if they put 13 spinning turbines and used them whenever they reached 14 close to their capacity? 15 A. (BY MR. JERRY SMITH) I'm aware that they 16 have had their units on serving load at various parts 17 of the season. And what I can tell you is part of the 18 reason that they've had their units on line in a 19 spinning mode, but not connected to the network, was 20 out of the Commission decision requiring them to do so 21 during storm season, so that we could shorten the 22 service restoration time period. 23 Q. Is that a reasonable thing that a good 24 utility company would do? 25 A. (BY MR. JERRY SMITH) It's something that we</p>	<p>Page 871</p> <p>1 MR. GRANT: Objection; relevance, 2 materiality. 3 CHMN. WOODALL: Sustained. 4 Q. (BY MR. MAGRUDER) Could Citizens become a 5 municipal utility? 6 MR. GRANT: Objection; relevance, 7 municipality. 8 CHMN. WOODALL: Sustained. 9 Q. (BY MR. MAGRUDER) The charter of the City of 10 Nogales permits it to own utilities. Since there are 11 rural co-op utilities on both sides of the county, 12 there is a possibility that Citizens could possibly 13 become a shareholder own a rural co-op as a utility? 14 MS. WOLFE: Objection, relevance. 15 MR. GRANT: Objection. 16 CHMN. WOODALL: Mr. Magruder, can you tell me 17 where you're going with these questions? 18 MR. MAGRUDER: Local control versus remote 19 control on the power plant. Local electrical system. 20 Right now it's controlled from the board rooms in 21 Connecticut. 22 CHMN. WOODALL: And your point as it relates 23 to these proceedings is what? 24 MR. MAGRUDER: It was generally in, the 25 newspapers regarded it was a lack of interest by the</p>
<p>Page 870</p> <p>1 think should have been avoided. We should have had 2 the transmission line so that was not necessary. That 3 is a fuel expense and environmental pollution 4 requirement that we don't feel is prudent and proper. 5 Q. I understand you really do like transmission 6 lines. There's no chance, then, in your mind that a 7 generation system is a solution to the problem in 8 Santa Cruz County? 9 A. (BY MR. JERRY SMITH) Oh, I think there's a 10 definite role for generation in Santa Cruz County. 11 I'm just not sure it's as you've characterized it. I 12 think generation offers local consumers an alternative 13 supplier other than Citizens, and the competitive 14 environment, that's what it's all about. 15 Q. You would like to have your own utility plant 16 in your county under your Citizens control, is that a 17 reasonable assumption? 18 MS. WOLFE: Objection. 19 MR. HEYMAN: Objection. 20 CHMN. WOODALL: Sustained. 21 Q. (BY MR. MAGRUDER) As you know, Citizens 22 Utilities is for sale. Did you know that? 23 A. Yes, I am aware of that for some time. 24 Q. And there are multiple options on what might 25 happen to that utility?</p>	<p>Page 872</p> <p>1 board of directors in Citizens that caused the 2 degradation in the capabilities of that county that 3 caused the problem for the ACC ruling S-2011. 4 CHMN. WOODALL: Your suggestion if it was 5 owned locally there would be a closer eye on what was 6 going on, is that the point? 7 MR. MAGRUDER: Yes, local interest, local 8 control I think is independence, and it's good for the 9 local people and generally that's what everybody I've 10 talked to would like to have instead of some large 11 company come in and controlling us from Salt Lake City 12 or something like that. 13 CHMN. WOODALL: Mr. Magruder, I do not find 14 that that line of questioning is relevant or material 15 to what is in front of us here, so if you can proceed 16 to another line of questioning. 17 Q. (BY MR. MAGRUDER) Let me talk about the 18 costs of a 345 kV line. It was earlier indicated by 19 Mr. Craven that he intends to use his present line. 20 Do you remember that testimony? 21 A. (BY MR. JERRY SMITH) Yes. 22 Q. He also indicated that it, transmission cost, 23 is bundled in the present costs, but it was a little 24 less than \$2 per kilowatt hour per month. Do you 25 remember that?</p>

35 (Pages 869 to 872)

ARIZONA REPORTING SERVICE, INC.
Court Reporting and Realtime Specialists

www.az-reporting.com

(602) 274-9944
Phoenix, AZ

Arizona Corporation Commission
Page 34 of 35

EXHIBIT
D

Arizona Corporation Commission
Page 35 of 35

